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Three Researchers Look at Obesity

By Aubin Tyler
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Lowering Obesity Rates Among Children

Laurie Miller Brotman, PhD

A researcher unexpectedly finds that improved parenting is one way to do it.

After 20 years of developing and evaluating parenting interventions for poor, urban children at risk for delinquency, Laurie Miller Brotman, PhD, found an unexpected side effect of improved parenting: lower rates of childhood and adolescent obesity.

In the early 1990s, Dr. Brotman, the Corzine Family Professor of Child and Adolescent Psychiatry, began evaluating the effect of parent training for families of delinquent youth identified through family court records. The consequences for parents of having a child just convicted of a crime were "fresh and real," she says. "People were really looking for help."

The initial 10-year study enrolled 99 of the adjudicated youths' younger siblings, ages 3 to 5, themselves at risk for aggressive and antisocial behavior. Families were randomized into either a parenting skills group or a control group. Subsequent federal grants enabled the

researchers to follow the children through late adolescence.

The evidence-based parenting program that Dr. Brotman's team adapted for urban, low-income families helped parents become more responsive to their preschoolers by listening to them, playing with them, and praising them for good behavior, Dr. Brotman says. Parents were also encouraged to consider a variety of discipline options so they could manage their children's behavior without resorting to physical punishment. "In families experiencing enormous stress, we found that parenting intervention during early childhood results in parents' being more responsive and less harsh and critical," Dr. Brotman says. "Children developed social and emotional skills that enabled them to get along with others, and they were less likely to rely on aggressive behavior."

The "obesity piece of the puzzle" developed as awareness of the national obesity crisis began to emerge a decade ago, says Dr. Brotman, along with a new body of literature linking certain parenting styles and behavior regulation and obesity.

"Preschoolers who have problems with regulation, including behavior and sleep, are at higher risk for obesity," says Dr. Brotman, whose research is supported in part by the J. Ira and Nicki Harris Family Foundation and the Bank of America Charitable Foundation. "It turns out that some parenting behaviors that prevent behavior problems are also associated with lower rates of obesity."

Dr. Brotman and colleagues looked at body mass index, blood pressure, nutrition, sedentary activity, and physical activity seven years after the parenting intervention in a sample of 40 girls, now age 11, who had been part of the original study of high-risk preschoolers.

"We saw very large effects in obesity rates in girls who had the intervention at age 4 compared to those who didn't," Dr. Brotman says. Compared to controls, the girls were more active and less sedentary and had significantly lower blood pressure; they consumed the same amount of calories but fewer calories from carbohydrates.

At first the researchers thought that such a finding in a very small girls-only sample might be the result of chance. But they were able to replicate the findings in a larger sample of boys and girls who were participating in a trial of ParentCorps, a culturally informed parenting intervention developed by Dr. Brotman and her team at the NYU Child Study Center. In a recent study with 171 ethnically diverse families published earlier this year in Child Development, Dr. Brotman reported that the intervention helped parents be more effective and children to perform better at school.

Her team is completing a study of ParentCorps (and a complementary program called TeacherCorps) in 1,050 minority children from 10 New York City public schools. "Mirroring the effects of the first study, we found that ParentCorps, a program that does not specifically address nutrition or physical activity, appears to put children on a different track toward healthy physical development," Dr. Brotman says.•

Preventing Obesity in Infants

Mary Jo Messito, MD

The institute of Medicine recommends that efforts to prevent obesity begin long before a child enters school. With the help of a $5 million government grant, a pediatrician hopes to definitively answer the question: Can intervention during infancy prevent future obesity?

"We're seeing that obesity starts really early on," says Mary Jo Messito, MD, clinical assistant professor of pediatrics and director of the Pediatric Obesity Program at Bellevue Hospital Center. Today almost 10 percent of infants and toddlers carry excess weight for their length, according to a recent report from the Institute of Medicine. Since it is known that early obesity often extends into adulthood, the report recommends that efforts to prevent obesity begin long before a child enters school.

In April the United States Department of Agriculture, the agency that oversees the federal nutrition program for Women, Infants, and Children (WIC), awarded Dr. Messito a grant to test the effectiveness of a primary care, family-centered child obesity prevention program beginning in the mother's pregnancy and continuing through the infant's first three years of life.

The four-year multimillion-dollar grant allows the pediatrician to continue work she began five years ago, teaching mothers to pay attention to their babies' cues during feeding. In an early pilot feasibility study, 37 families attended a group with a nutritionist and child development specialist in the playroom as part of their regular primary care clinic visit at Bellevue. The visits were staggered, with cohort families grouped together by infant age.

"The thinking was that we needed to do something different," Dr. Messito says. "We wanted to know whether families would accept it and would they come. They did. The families enjoyed it, and compared to feeding behaviors in controls, we saw real improvement with parenting nutrition education. On the downside, the dropout rate was fairly high, but we were running it without enough support. We needed a lot more reminders and incentives."

In a larger study, published last year in Academic Pediatrics, Dr. Messito found that among almost 400 largely Latina

immigrant mothers enrolled in New York City's WIC program, 72 percent said that infant crying must indicate hunger, and more than half said that babies should always finish the bottle, regardless of cues to satiety, such as nipple detachment or turning their heads away.

"We say to the mom, why are you still giving the bottle at two years old? The mom says, 'She cries, she wants it,' " Dr. Messito says. "We call that overfeeding with love."

In a second study on maternal feeding practices presented at a meeting in May, Dr. Messito and her team compared feeding practices and dietary intake in infancy among 200 low-socioeconomic status families enrolled in WIC and 200 high socioeconomic-status patients seen in private practice. The study showed "stark differences in feeding styles," she says. Both groups breast-fed their babies, but the WIC group more often combined breast-feeding with formula feeding and was more likely to introduce juice early and add cereal to milk bottles. Although the infants had similar weights at birth, by age 3 months more than twice as many of the infants in the WIC group fell into an overweight category.

"We have many Latina immigrant mothers here at Bellevue, and many want to breast-feed," Dr. Messito says. "But when we look at why fewer than half exclusively breast-feed, there's a perception among mothers that they don't have enough breast milk. So the response to crying is that baby must be hungry."

From Dr. Messito's observations and those reported in the literature, 20 percent to 30 percent of immigrant mothers perceive overweight infants as healthy. Additionally, knowledge of healthy portion sizes and recommended fruit and vegetable intake is often incomplete.

"Food insecurity can impact feeding style," too, says Dr. Messito. "If you're more likely to run out of food or money at the end of the month, you're more likely to adopt a feeding style that pressures the infant to feed or to give your child a food treat when you can't afford other things."

The solution? "Teaching sensible limit setting around feeding is part of our intervention," Dr. Messito says, even though it's "one of the most difficult things. As a parent, you have to model behavior—eating carrots instead of chips. You make it the default behavior to protect your child." •

Change the Food Environment
Brian Elbel, PHD, MPH

A public health researcher studies how people make choices. “Food choice has a really big impact on public health,” says Dr. Elbel. “it’s a ripe area for public policy, particularly for vulnerable groups.”

In the fall of 2009 researcher Brian Elbel, PhD, MPH, caused an uproar by publishing a study in Health Affairs that looked at early results of New York City’s new calorie labeling law, the first in the nation. The law, in effect since July 2008, requires fast-food chains to post calorie counts for their menu items. The effect of menu labeling on fast-food purchases, according to the study, was negligible.

“Labeling is not a silver bullet, not in the short term,” says Dr. Elbel, assistant professor of medicine. “Increasingly we know that food choices are multifactorial and that the big drivers—taste, convenience, and price—are hard to overcome. We really need to focus on the food environment, where and how people make choices.”

Dr. Elbel’s early result has since been duplicated in other studies, including one by Stanford University researchers, who looked at Starbucks data for more than 100 million transactions in New York City before and after labeling went into effect. They found that labeling resulted in a 6 percent decline in calories chosen—a difference of 15 calories.

Dr. Elbel uses the tools of a relatively young discipline, behavioral economics, the study of how people make choices, to examine how government policies affect the way people eat. “Food choice has a really big impact on public health,” he says. “It’s a ripe area for public policy, particularly for vulnerable groups, like racial and ethnic minorities.”

Case in point: At least 3 million New Yorkers in low-income neighborhoods have little or no access to a neighborhood supermarket where they can buy fresh foods. Instead, there is a high concentration of fast-food restaurants and bodegas that sell less healthy foods. Not coincidentally, residents in these same areas have high levels of obesity and diabetes.

To attack this problem, Dr. Elbel has partnered with a New York City initiative, FRESH, for Food Retail

Expansion to Support Health, which is using tax credits and zoning waivers to encourage supermarkets and grocery stores to come into underserved areas. In one neighborhood in the South Bronx, his team is collecting baseline data to quantify fresh fruit and vegetable consumption by local children—before the supermarket arrives.

“We know there’s a correlation between fresh food availability and choice. What we don’t know is how big an impact it will have,” Dr. Elbel says. “But I don’t think we can wait for the perfect intervention. The obesity problem is too large.” An estimated 68 percent of Americans are obese or overweight; 17 percent of American children and teens aged 2-19 are obese and about 15 percent are overweight, according to the latest data from the Centers for Disease Control and Prevention.

Over the next few months, Dr. Elbel hopes to have another project up and running: a “mock bodega” in Bellevue Hospital. “We’ll do several things—change the prices of items, change the labeling—to see if people avoid them or not,” he says. By lowering prices on fruits and vegetables and raising prices on junk food, “we’ll try to nudge people toward healthy items.” •